T/S GRADER

CHANGES FOR FULL SIZE PRINTERS AND IMPROVEMENTS

Before you add any of the following improvements, I suggest you break in to the program from the main menu and then enter PRINT FREE and write the answer down for later reference! After you have made all the changes you wish and before you do anything else enter PRINT FREE again and find the difference between the two answers. Then subtract the difference to the 5 digit numbers found in lines 3, 1090, and 9532.

ALLOWING USE OF A FULL SIZE PRINTER

This is a capability many of you have requested and I have just finished having the code for the TASMAN interface tested (I don't own a full size printer and so can't test it myself). With a few adjustments it should also work with the Aerco parallel interface and the Byte-Back RS232 interface.

First for the changes to basic:

```
  50 LET B$="
             ": FOR I=Y TO M-A:
POKE VAL "65530",I: POKE VAL "65
531",Y: LET B$(A)=B$(A): RANDOMI
ZE USR VAL "65500": LPRINT B$: N
EXT I: LPRINT : LPRINT : LPRINT
: LET B$="": RETURN

 130 PRINT AT C,T+C;("TIMEX" AND
 PEEK VAL "26704"=E)+("FULL-SIZE
" AND PEEK VAL "26704"<>E)

4150 LET M=INT ((Q+A)/B): IF J=E
 THEN RANDOMIZE USR VAL "65417"

4165 ON ERR GO TO VAL "4170"

5090 LET M=R+B: IF R>O+B THEN LE
T M=T-A

6100 CLS : PRINT AT G,Y;"1 LIST
CLASS NAMES"'"2 ALTER CLASS NAME
S"'"3 PRINT ALL CLASS AVERAGES F
OR   A PUPIL"'"4 SELECT PRINTER
TYPE"'"5 RETURN TO MAIN MENU"

6110 LET A$=INKEY$: IF A$<"1" OR
 A$>"5" THEN GO TO VAL "6110"

6200 LET M=Y: FOR N=A TO U: LET
M=M+A: PRINT N;" ";W$(N),: IF N/
(T+T)=INT (N/(T+T)) THEN GO TO V
AL "6220"

6225 PAUSE Y: LET A$=INKEY$: IF
A$="C" OR A$="c" THEN GO SUB D/B
```

```
6240 IF N<U THEN IF A$="G" OR A$
="g" THEN CLS : LET M=Y: GO TO V
AL "6210"

6470 LET M=V: LET V=Y: PRINT AT
T+A,Y;"C)OPY  M)ENU  I)NPUT  ";:
 IF N<X THEN PRINT "G)O ON"
```

PLEASE DELETE LINE 6471

```
6500 PRINT AT J,Y;"SELECT PRINTE
R TO USE:"''"   1 TIMEX 2040"''"
   2 FULL SIZE PRINTER"

6510 PAUSE Y: LET A$=INKEY$: IF
A$="2" THEN POKE VAL "26703",VAL
 "184": POKE VAL "26704",VAL "25
0": GO TO A

6520 IF A$="1" THEN POKE VAL "26
703",Y: POKE VAL "26704",E: GO T
O A

6530 GO TO VAL "6510"

7590 IF A$="C" OR A$="c" THEN LE
T M=T-B: GO SUB D/B

9530 CLS : SAVE "GRADER" LINE VA
L "9540": CLS : BEEP VAL ".5",VA
L "30": SAVE "grader"CODE VAL "6
4181",VAL "1354": BEEP VAL ".5",
VAL "40"

9540 POKE VAL "23730",VAL "180":
 POKE VAL "23731",VAL "250": LOA
D ""CODE : BORDER NOT PI: PAPER
NOT PI: INK VAL "7": POKE VAL "2
3658",VAL "8": BEEP VAL ".5",VAL
 "35": GO TO SGN PI
```

Next comes the machine code section. First we must lower RAMTOP so POKE 23731,250 and POKE 23730,180 as direct commands and then temporarily add the following line:

```
9900 FOR M=64181 TO 64297: INPUT
 N: POKE M,N: PRINT M;" ";N: NEX
T M
```

Enter GO TO 9900 and begin entering each of the following data from LEFT to RIGHT:

```
64181:     0    0    0  254   94   40
64187:    17   79   58  182  250  254
64193:    94   40   17  205    9   32
64199:    56   64  207   12    0    0
```

64205:	50	182	250	175	50	183
64211:	250	201	121	254	64	48
64217:	43	214	48	79	58	183
64223:	250	254	0	40	17	58
64229:	181	250	129	79	175	50
64235:	182	250	50	183	250	50
64241:	181	250	24	207	121	7
64247:	7	7	7	50	181	250
64253:	58	183	250	60	50	183
64259:	250	201	214	55	24	211
64265:	219	191	203	71	32	181
64271:	175	211	251	61	211	123
64277:	211	251	121	211	123	62
64283:	247	211	251	62	255	211
64289:	251	121	254	13	192	14
64295:	10	24	154			

IF using the new type C Tasman then change the 191 at address 64266 to 251

Now change the values in line 9900 to M=65500 TO 65531. Enter GO TO 9900 and input this data:

65500:	42	77	92	22	32	237
65506:	75	250	255	213	197	229
65512:	205	145	40	13	40	2
65518:	62	32	225	119	193	209
65524:	4	35	21	32	236	201
65530:	0	0				

Now you can delete line 9900. I assume you are making these changes to a copy of the program already containing student data. Since we are now taking up more space with the machine code and basic, you may exceed memory capacity if your data was already close to the limit. Therefore you would either need to start over or delete lines as described in the original documentation. Be sure you also add the changes to a cleared copy as a master to use in the future.

At this point we have hopefully completed the set up, but before you do anything to test it we need to save it. If you test it first and a mistake was made you could have fouled up other routines and not find out till later. Enter GO TO 1 and then use the regular save routine on a fresh tape (don't record over your back-up copy). After saved and verified you can test the routine out if your printer is connected. Go to the sub menu and select the option to change printer type as explained on the screen. Whichever type is selected will be shown on the main menu.

WARNING: If you are using a printer which does not match the selection shown on the screen, the computer will lock up and you will have to turn it off and then reload the program! If you have both types of printers connected you should have the one not being used turned off.

As written, the program always will load in with the Timex printer selected. If you wish to change that you will need to examine the POKES shown in line 6510 and put those same POKES in line 9540 just before the statement which says GO TO SGN PI.

You will also notice that the program will no longer thicken characters because the routine won't work on thickened characters - sorry. There is still another problem. There are at least some printers which will not accept the code for the graphic character I use to separate the columns of grades when using option 5 (the Seikosha 100 definately won't) and this

causes info to run together or causes other problems. Therefore I adjusted the printout routine to put a space there instead which should work with any printer although it is not the perfect solution. Memory location 65519 holds the code for the character to be printed in that spot and you can POKE that address to change it to something your printer will print such as an asterisk (code 42). Just break into the program and as a direct command poke in the value you want. If your printer has built in graphic codes of its own you could try one of those.

The above data is for the machine code and works on the TASMAN interface. Only a small amount of it needs to be changed for the other interfaces mentioned. To make it work with the Aerco interface make the following changes to memory addresses beginning with address [redacted]: 64265

64265:	219	127	203	103	32	181
64271:	203	79	40	177	121	211
64277:	127	254	13	192	14	10
64283:	24	167	0	0		

If the above numbers do not work with your printer then try entering them again, but enter the value of zero for addresses 64271 through 64274 inclusive.

To use the Byte-Back interface make the following poke changes:

64265:	197	1	127	63	237	120
64271:	203	127	32	3	193	24
64277:	174	203	71	40	249	13
64283:	209	123	237	121	254	13
64289:	192	14	10	24	158	

Also add the following statement to line 6510 just before GO TO A to use the Byte-Back interface:

OUT VAL "16255",Y: OUT VAL "16255",Y: OUT VAL "16255",Y: OUT VAL "16255",VAL "64": OUT VAL "16255",VAL "206": OUT VAL "16255",VAL "55"

SOME STUFF TO EXPERIMENT WITH

The printer driver we've installed should also accept special printer instructions such as enlarged print or bold faced printing. Any two digit hex code which follows an up-arrow (symbol shift-H) will be interpreted as a printer command. The command needs to be sent before actual printing occurs so try adding to line 6510 (just before GO TO A) this instuction:

LPRINT "↑ØE":

ØE is the hex code many printers use for enlarged printing (check your manual to be sure). I assume you could chain several commands together - each preceded by an up-arrow.

I would really appreciate it if any of you who use a full size printer would let me know what interface and printer you are using and if it works or not or if you use any special printer commands successfully. It is the

only way I have of knowing what printers are compatible or not compatible.

OTHER ENHANCEMENTS

You already have a way to limit the highest score when listing all averages for a student, but you may also want to provide for a minimum score.

To set a bottom limit add line 6439:

```
6439 IF I<VAL "50" THEN LET H=H+
(VAL "50"-I): LET I=VAL "50"
```

If you wish to see the actual score in spite of the limiting of the combined average, then leave out the last statement in the line. You can of course change the limit of 50 to whatever you wish.

You can also add another feature to the statistical analysis section. Along with the overall average (which the following change alters to be called the MEAN) you can have the MODE which is the average of the highest and lowest scores.

```
7570 PRINT ,W$(N)''"TEST #";V,"(
";F;" TESTS)"''"HIGHEST= ";H,"LO
WEST= ";I''"MEAN= ";Q;"   MODE=
";(H+I)/B''"VARIANCE= ";Z''"STAN
DARD DEVIATION= ";SQR Z'': IF Q>
Y THEN PRINT "COEFFICIENT OF"'"
      VARIATION= ";(SQR Z)/Q
```

If you want the program to load in with the keyboard beep on then add to line 9540 just before the last statement the following:

```
POKE VAL "23609",VAL "10"
```

This can be very useful when first putting data in the program.

Another option to add is a backup feature. This will allow you to correct an incorrect name when doing the initial set-up or correct an incorrect grade when inputting test scores with option 3.

The routine will let you backup repeatedly but not into a previous class, therefore, when you input the last student in any class or give the last student a grade, you can not backup because the program will have already moved on to the next class. You can still make corrections the old way with option 5 however.

```
1200 CLS : FOR V=F TO X: PRINT A
T J,Y; PAPER G; INK Y;" INPUT NA
ME #";V-F+A: INPUT N$(V, TO L):
CLS : PRINT AT C,Y;V-F+A;".";N$(
V, TO L): IF N$(V,A)="-" THEN LE
T V=V-B

1210 NEXT V: NEXT N: PAUSE 0: GO
 TO A
```

When inputting names in your classes, you can input a "-" to backup to

the previous name.

The next lines allow you to backup when inputting grades. To use it input a grade value of "254". This means you can not give a grade of 254 unless you use option 5 to change a grade.

```
3100 CLS : FOR N=N TO F: LET Z=N

3120 GO SUB (T AND V(R-A)+(T+E A
ND V)R-B): IF N$(N,V+L)=" RETURN
 " AND N>Z THEN LET N=N-A: GO TO
 VAL "3110"
```

To obtain the token " RETURN " used in line 3120 you first get the token " THEN " (symbol shift "G") and follow it by pressing "Y" which will give the token " RETURN ". Now backup and delete the "THEN" token. The code for "RETURN" is 254.

After you have saved your changes we can see if lines 3, 1090, and 9532 were adjusted correctly. Enter RUN and you should go to the set-up routine. If not then decrease the values in those 3 lines until you do. When that works enter data for 1 class, 1 student total, and 1 grade (all minimum values) and continue with the actual class name and student name. If you aren't returned to the main menu when done then you must increase the values in the 3 lines.

PRO/FILE OWNERS

I finished the first three issues of EXTENSIONS which shows you how to add many capabilities to the program and how to conserve memory for files. Just $6.00 each.

There are over two dozen enhancements/improvements/corrections in the 3 issues including conversion to a Spectrum or 2068 with emulator with or without Sinclair microdrives!

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